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6. AUTHORS

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5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAMES AND ADDRESSES
Gordon Research Conferences, Inc.
512 Liberty Lane

West Kingston, RI 02892 -1502

8. PERFORMING ORGANIZATION REPORT NUMBER

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U.S. Army Research Office
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The views, opinions and/or findings contained in this report are those of the author(s) and should not contrued as an official Department of the Army position, policy or decision, unless so designated by other documentation.

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a. REPORT	b. ABSTRACT	c. THIS PAGE			Ji-Cheng Zhao
UU	UU	UU	UU		19b. TELEPHONE NUMBER 614-292-9462

RPPR Final Report
as of 24-Aug-2018

Agency Code:

Proposal Number: 71560MSCF **Agreement Number: W911NF-17-1-0338**
INVESTIGATOR(S):

Name: Ji-Cheng Zhao
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Phone Number: 6142929462
Principal: Y

Organization: **Gordon Research Conferences, Inc.**
Address: 512 Liberty Lane, West Kingston, RI 028921502
Country: USA

DUNS Number: 075712877 EIN: 050300482
Report Date: 18-Oct-2018 Date Received: 21-Aug-2018
Final Report for Period Beginning 19-Jul-2017 and Ending 18-Jul-2018
Title: 2017 Physical Metallurgy Gordon Research Conference and Seminar
Begin Performance Period: 19-Jul-2017 **End Performance Period:** 18-Jul-2018
Report Term: 0-Other

Submitted By: Nancy Ryan Gray Email: grants@grc.org
Phone: (401) 360-1505

Distribution Statement: 1-Approved for public release; distribution is unlimited.

STEM Degrees: **STEM Participants:**

Major Goals: Organizing a Gordon Research Conference involves extensive communication with the research community to identify important issues at the frontiers of the field, and solicit suggestions for speakers and discussion leaders to participate in the conference. The Chair then contacts prospective participants to invite them to talk and discuss the nature of their contributions. The Chair then communicates the topics and aims of the conference through web pages, contact with relevant international professional bodies and email to members of the research community around the world to encourage applications for participation in the conference. The Chair is then responsible for assessing and accepting the applications and fielding a host of questions both concerning the technical content and practical aspects of conference participation.

Accomplishments: The field of Physical Metallurgy is currently seeing major changes in its research aims from qualitative understanding to quantitative predictive capability. This is largely driven by our ability to handle massive 3D data describing the structure of materials, to locally evaluate materials properties, and to acquire systematic data series in high-throughput experiments. As 3D imaging is transitioning from technique development to application, it permits one to test modeling approaches at different levels of complexity and spatial resolution. Here, the direct modeling and simulation of experiments and the inverse modeling of the experimental results just begin to demonstrate their analytic power and their power to increase the accuracy of the measurements. Meanwhile, the classical core of the field, modelling of materials behavior and of structure-property relations, is still challenged by the difficulties to seamlessly transition between different modelling scopes from atoms to materials defects to continuum field equations. The frontiers of the field therefore are concerned with the systematization and the quantification of information on materials and with the assessment and increase of the predictive capability of the modelling and simulation. Modelling and simulation is beginning to provide thermodynamic information on materials in complex environments. Small scale experiments can be pushed to the scale of individual defects and can challenge modelling particularly concerning the mechanical properties of materials: fracture, fatigue, friction and wear. Additive manufacturing is posing new challenges to modelling and at the same time opens entirely new avenues to alloy development. The aim of this Gordon Conference was to assess these current frontiers of the field and to sketch central questions which the community will have to solve for Physical Metallurgy to advance as a field that spans from understanding atomistic processes on femtosecond time scales to assessing the behavior of structural components for years in service.

Training Opportunities: Speakers, discussion leaders, poster presenters and attendees simultaneously contributed to and benefited from the collective skills and experience shared throughout the conference.

Results Dissemination: The final program has been posted on the GRC web site.

RPPR Final Report
as of 24-Aug-2018

Honors and Awards: Nothing to Report

Protocol Activity Status:

Technology Transfer: Nothing to Report

GORDON RESEARCH CONFERENCES

FINAL PROGRESS REPORT
Army Research Office
Physical Metallurgy GRC/GRS

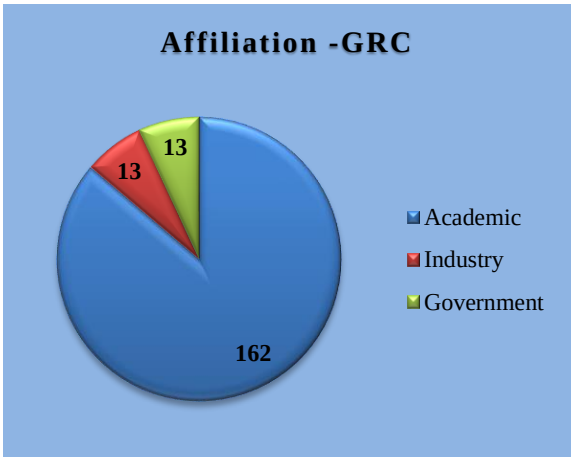
Grant Number W911NF-17-1-0338
July 22-28, 2017

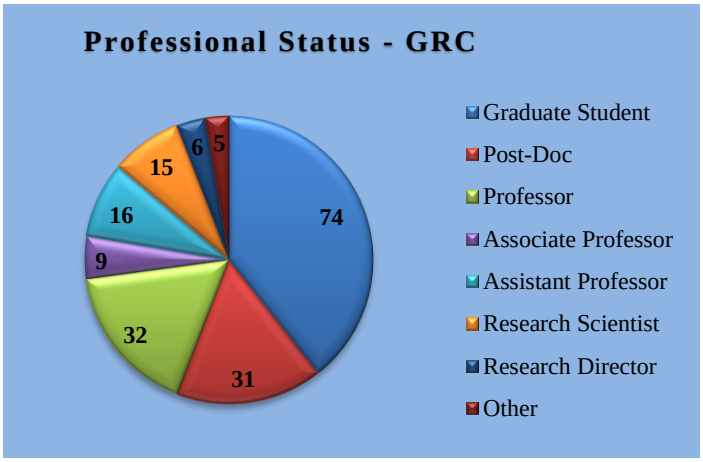
Operational Summary

The Gordon Research Conference (GRC) and Gordon Research Seminar (GRS) on Physical Metallurgy were held at the University of New England from July 22-28, 2017. The meeting covered a variety of scientific topics and the content presented was highly rated by participants.

Conference Participants

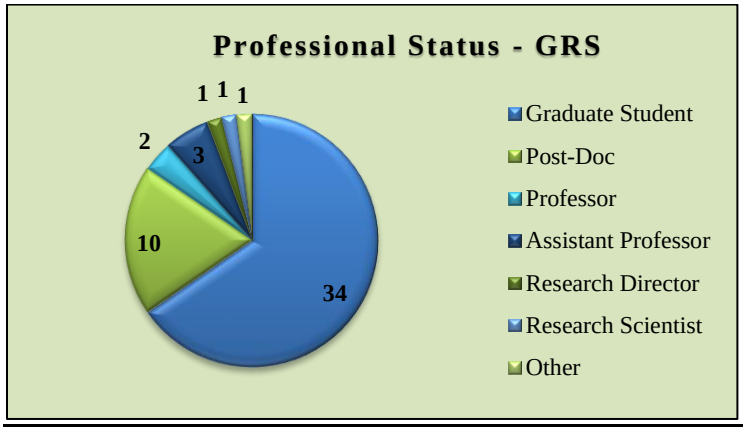
The Conference was well-attended with 188 participants. Scientists from academia represented 86% of the participants while attendees from government accounted for 7% and those from industry totaled 7%. The meeting also attracted a strong mix of young investigators and senior scientists. Students and post-docs accounted for 56% of all attendees. Approximately 22% of the participants at the 2017 meeting were women.

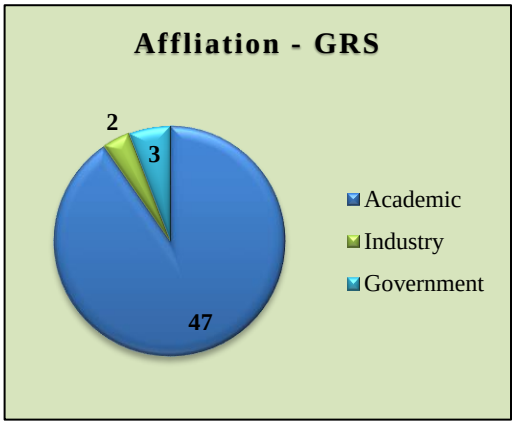




Seminar Participants

The Seminar was well-attended with 52 participants. Scientists from academia represented 90% of the participants while attendees from government accounted for 6% and attendees from industry accounted for 4%. Students and post docs combined accounted for 85% of all attendees. Approximately 37% of the participants at the 2017 seminar were women.





Conference Program

The field of Physical Metallurgy is currently seeing major changes in its research aims from qualitative understanding to quantitative predictive capability. This is largely driven by our ability to handle massive 3D data describing the structure of materials, to locally evaluate materials properties, and to acquire systematic data series in high-throughput experiments. As 3D imaging is transitioning from technique development to application, it permits one to test modeling approaches at different levels of complexity and spatial resolution. Here, the direct modeling and simulation of experiments and the inverse modeling of the experimental results just begin to demonstrate their analytic power and their power to increase the accuracy of the measurements. Meanwhile, the classical core of the field, modelling of materials behavior and of structure-property relations, is still challenged by the difficulties to seamlessly transition between different modelling scopes from atoms to materials defects to continuum field equations. The frontiers of the field therefore are concerned with the systematization and the quantification of information on materials and with the assessment and increase of the predictive capability of the modelling and simulation. Modelling and simulation is beginning to provide thermodynamic information on materials in complex environments. Small scale experiments can be pushed to the scale of individual defects and can challenge modelling particularly concerning the mechanical properties of materials: fracture, fatigue, friction and wear. Additive manufacturing is posing new challenges to modelling and at the same time opens entirely new avenues to alloy development. The aim of this Gordon Conference was to assess these current frontiers of the field and to sketch central questions which the community will have to solve for Physical Metallurgy to advance as a field that spans from understanding atomistic processes on femtosecond time scales to assessing the behavior of structural components for years in service.

Conference Budget

Funding provided by the ARO supported partial registration for 11 graduate students, 1 postdoc, 2 assistant professors, and 1 associate professor at the GRC and partial registration for 2 postdocs, 10 graduate students, 3 assistant professors, and 1 other at the GRS.

Conference Feedback

Participants had an opportunity to provide feedback at the end of the Conference. The feedback collected from the meeting was extremely positive. Evaluations included numerous positive remarks regarding the well-chosen speakers, excellent poster sessions, and the ability to have many one-on-one and small group discussions. Evaluations from the GRS included positive comments regarding the poster sessions, excellent talks, and opportunities for peer interaction and networking.

GRC would like to thank the ARO for its continued support of the meetings. The contributions received have been critical to the success of the conferences and are having a measurable impact in advancing the frontiers of science worldwide.

Dr. Peter Gumbsch, GRC Chair
Fraunhofer Institute for Mechanics of Materials IWM

Dr. Victoria Miller, GRS Chair
North Carolina State University

Dr. Nancy Ryan Gray
President and Chief Executive Officer
Gordon Research Conferences

Physical Metallurgy

Gordon Research Conference

Frontiers of Quantification and Predictive Capability in Physical Metallurgy

July 23-28, 2017

University of New England

Biddeford, ME

Chairs: **Peter Gumbsch** & **Ji-Cheng Zhao**

Vice Chairs: **Carol A. Handwerker** & **Dierk R. Raabe**

Contributors

Meeting Program

Sunday	
2:00 pm - 9:00 pm	Arrival and Check-in
6:00 pm	Dinner
7:30 pm - 7:40 pm	Welcome / Introductory Comments by GRC Site Staff
7:40 pm - 9:30 pm	**Learning Across Disciplines and Dealing with Big Data**
	Discussion Leader: **Dennis Dimiduk** (Ohio State University, USA)

7:40 pm - 8:20 pm	**William Schroeder** (Kitware Inc., USA) "Frontiers in Image Analysis: Past, Present and Future"
8:20 pm - 8:35 pm	Discussion
8:35 pm - 9:15 pm	**Nicholas Bassill** (New York State Mesonet / University at Albany, SUNY, USA) "Numerical Weather Prediction"
9:15 pm - 9:30 pm	Discussion

Monday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	**Multi-Scale Assessment of Mechanical Properties**
	Discussion Leader: **Victoria Miller** (North Carolina State University, USA)
9:00 am - 9:40 am	**Henry Proudhon** (MINES ParisTech, France) "Using Near-Field X-Ray Imaging and Diffraction to Study the Mechanics of Polycrystalline Materials"
9:40 am - 10:00 am	Discussion
10:00 am - 10:30 am	Coffee Break
10:30 am - 11:10 am	**Jaafar El-Awady** (Johns Hopkins University, USA) "Quantifying Fatigue Damage and Crack Initiation in Metals: Coarse-Grained Simulations and *In Situ* Experiments"
11:10 am - 11:30 am	Discussion
11:30 am - 12:10 pm	**Joel Bernier** (Lawrence Livermore National Laboratory, USA) "*In Situ* Characterization for Polycrystalline Materials at the Intergranular Mesoscale"
12:10 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Interfaces in Functional Materials**
	Discussion Leader: **Guenter Gottstein** (RWTH Aachen University, Germany)
7:30 pm - 8:10 pm	**Ju Li** (Massachusetts Institute of Technology, USA) "Interfaces in Environments"
8:10 pm - 8:30 pm	Discussion

8:30 pm - 9:10 pm	**Cynthia Volkert** (University of Goettingen, Germany) "Controlling Friction at Nanoscale Sliding Contacts"
9:10 pm - 9:30 pm	Discussion
Tuesday	
7:30 am - 8:30 am	Breakfast
8:30 am	Group Photo
9:00 am - 12:30 pm	**Frontiers in Alloy Design**
	Discussion Leader: **David Rugg** (Rolls Royce, United Kingdom)
9:00 am - 9:40 am	**Rui Yang** (Institute of Metal Research, Chinese Academy of Sciences, China) "Alloy and Process Design for High Performance Titanium Alloys and Aluminides"
9:40 am - 10:00 am	Discussion
10:00 am - 10:30 am	Coffee Break
10:30 am - 11:10 am	**Kevin Anderson** (Mercury Marine, Brunswick Corporation, USA) "Metallurgy of Sustainable, High Toughness, Al-Si High Pressure Die Casting Alloys"
11:10 am - 11:30 am	Discussion
11:30 am - 12:10 pm	**William Curtin** (École Polytechnique Fédérale de Lausanne, Switzerland) "Predictive Theory to Guide Design of High Entropy Alloys"
12:10 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Small Scale Experiments Testing the Big**
	Discussion Leader: **Kevin Hemker** (Johns Hopkins University, USA)
7:30 pm - 8:10 pm	**Mitra Taheri** (Drexel University, USA) "Small Scale *In Situ* Experiments: Opportunities for New Science and Avoiding the Pitfall of Simply Scaling Down the Bulk"
8:10 pm - 8:30 pm	Discussion
8:30 pm - 9:10 pm	**Daniel Gianola** (University of California, Santa Barbara, USA) "Recent Advances in Quantitative *In Situ* Mechanical Testing: Towards High-Throughput Defect Analysis"

9:10 pm - 9:30 pm	Discussion
Wednesday	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	**Microstructure Prediction Beyond Classical Thermodynamics**
	Discussion Leader: **Dierk Raabe** (Max Planck Institute for Iron Research, Germany)
9:00 am - 9:40 am	**Anton Van der Ven** (University of California, Santa Barbara, USA) "High Temperature Thermodynamics of Alloys and Their Oxides from First Principles"
9:40 am - 10:00 am	Discussion
10:00 am - 10:30 am	Coffee Break
10:30 am - 11:10 am	**Maryam Ghazisaeidi** (Ohio State University, USA) "Multi-Cell Monte Carlo Method for Phase Prediction in Alloys"
11:10 am - 11:30 am	Discussion
11:30 am - 12:10 pm	**Marisol Koslowski** (Purdue University, USA) "Stress Relaxation Mechanisms in Nano Crystalline Thin Films"
12:10 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	**3D Microstructures**
	Discussion Leader: **Alexis Lewis** (National Science Foundation, USA)
7:30 pm - 8:10 pm	**Yujiro Hayashi** (Toyota Central R&D Labs., Inc., Japan) "3D Orientation and Stress Mapping with X-Ray Diffraction"
8:10 pm - 8:30 pm	Discussion
8:30 pm - 9:10 pm	**Tresa Pollock** (University of California, Santa Barbara, USA) "3D Microstructure: Promise, Progress and Barriers"
9:10 pm - 9:30 pm	Discussion
Thursday	
7:30 am - 8:30 am	Breakfast
8:30 am - 9:00 am	Business Meeting

	Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair
9:00 am - 12:30 pm	**Frontiers in Additive Manufacturing**
	Discussion Leader: **Jutta Kloewer** (VDM Metals, Germany)
9:00 am - 9:40 am	**Moataz Attallah** (University of Birmingham, United Kingdom) "Additive Manufacturing of Ni-Superalloys"
9:40 am - 10:00 am	Discussion
10:00 am - 10:30 am	Coffee Break
10:30 am - 11:10 am	**Sudarsanam Suresh Babu** (University of Tennessee, USA) "Transients in Solidification and Solid-State Transformations in Materials During Additive Manufacturing with Complex Thermo-Mechanical Signatures"
11:10 am - 11:30 am	Discussion
11:30 am - 12:10 pm	**Michael Groeber** (Air Force Research Laboratory, USA) "Application of Characterization, Modeling and Analytics Towards Understanding the Process-Structure Linkages in Metallic 3D Printing"
12:10 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Direct Modelling of Experiments**
	Discussion Leader: **Carol Handwerker** (Purdue University, USA)
7:30 pm - 8:10 pm	**Marc De Graef** (Carnegie Mellon University, USA) "Enabling Quantitative Microstructure Analysis Through Forward Modeling of Characterization Modalities"
8:10 pm - 8:30 pm	Discussion
8:30 pm - 9:10 pm	**Christopher Hutchinson** (Monash University, Australia) "Combinatorial Approaches in Metallurgy – Transitions in Behaviour, Model Calibration and Interfacial Properties"
9:10 pm - 9:30 pm	Discussion
Friday	
7:30 am - 8:30 am	Breakfast

9:00 am	Departure

Physical Metallurgy (GRS)

Gordon Research Seminar

Modern Processing Science in Physical Metallurgy

July 22-23, 2017

University of New England

Biddeford, ME

Chair: **Victoria Miller**

Contributors

Meeting Program

Saturday	
2:00 pm - 5:00 pm	Arrival and Check-in
3:30 pm - 3:45 pm	Introductory Comments by GRC Site Staff / Welcome by the GRS Conference Chair
3:45 pm - 4:30 pm	**Keynote Session: Opportunities and Challenges in Metals Processing Research**
	Discussion Leader: **Kathlene Reeve** (Purdue University, USA)
3:45 pm - 4:15 pm	**Adam Pilchak** (U.S. Air Force Research Laboratory, USA) "Modern Metals Processing Challenges Facing the Aerospace Sector"
4:15 pm - 4:30 pm	Discussion
4:30 pm - 6:00 pm	Poster Session
6:00 pm	Dinner
7:30 pm - 9:30 pm	**Advances in Thermomechanical Processing**
	Discussion Leader: **Suveen Mathaudhu** (University of California, Riverside, USA)
7:30 pm - 7:50 pm	**Anirudh Raju Natarajan** (University of California, Santa Barbara, USA) "Modeling Precipitation in Alloys: From Atoms to the Mesoscale"
7:50 pm - 8:00 pm	Discussion
8:00 pm - 8:20 pm	**Aeriel Murphy** (University of Michigan, USA)

	"The Effect of Aluminum Content on Static Recrystallization and Grain Growth in Magnesium"
8:20 pm - 8:30 pm	Discussion
8:30 pm - 8:50 pm	**Patrick Shower** (Oak Ridge National Laboratory, USA) "The Evolution of Theta Prime Precipitates in an Al-Cu Alloy Investigated with Phase Field Theory"
8:50 pm - 9:00 pm	Discussion
9:00 pm - 9:20 pm	**Kamalika Chatterjee** (University of Illinois at Urbana-Champaign, USA) "Study of Grain and Sub-Grain Level Deformation in a Polycrystalline Ti-7Al Alloy"
9:20 pm - 9:30 pm	Discussion
Sunday	
7:30 am - 8:30 am	Breakfast
9:00 am - 11:00 am	**Solidification: Casting and Additive Manufacturing** Discussion Leader: **Allison Beese** (Pennsylvania State University, USA)
9:00 am - 9:20 am	**Sudipto Mandal** (Carnegie Mellon University, USA) "Quantification of Processing-Microstructure-Property Relationships in Titanium Alloys"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	**Lily Nguyen** (U.S. Naval Research Laboratory, USA) "Advancing High Resolution 3D Characterization Using Mechanical Serial Sectioning"
9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	**Chinnapat Panwisawas** (University of Birmingham, United Kingdom) "Materials Physics of Additive Manufacturing: An ICME approach"
10:20 am - 10:30 am	Discussion
10:30 am - 10:50 am	**Theron Rodgers** (Sandia National Laboratories, USA) "Modeling Microstructure Evolution During Metal Additive Manufacturing"
10:50 am - 11:00 am	Discussion
11:00 am - 12:30 pm	Poster Session *Coffee will be served in the poster area from 11:00 am - 11:30 am*
12:30 pm	Lunch
1:30 pm - 2:30 pm	**Mentorship Component: Career Opportunities in Physical Metallurgy After Grad School** Discussion Leader: **Ji-Cheng Zhao** (The Ohio State University, USA)

1:30 pm - 2:30 pm Panel Discussion

"Bridging the Gap from Student to Professional Life"

- **Allison Beese** (Pennsylvania State University, USA)
- **Suveen Mathaudhu** (University of California, Riverside, USA)
- **Adam Pilchak** (U.S. Air Force Research Laboratory, USA)
- **Luke Rettberg** (Pratt & Whitney, USA)

2:30 pm - 3:00 pm Evaluation Period

Fill in GRS Evaluation Forms

3:00 pm Seminar Concludes

Physical Metallurgy (2017)

Name	Organization	Participation
Agnew, Sean	University of Virginia	Poster Presenter
Aldaz-Cervantes, Mayela R	University of California, Santa Barbara	Poster Presenter
Allison, John	University of Michigan	Attendee
Aminahmadi, Behnam	Colorado School of Mines	Poster Presenter
Anber, Elaf	Drexel University	Poster Presenter
Anderson, Kevin	Mercury Marine, Brunswick Corporation	Speaker
Attallah, Moataz	University of Birmingham	Speaker
Babu, Sudarsanam Suresh	University of Tennessee	Speaker
Bassill, Nicholas	University at Albany, SUNY	Speaker
Beaudoin, Armand J	University of Illinois, Urbana-Champaign	Attendee
Beese, Allison M	Pennsylvania State University	Poster Presenter
Bernier, Joel	Lawrence Livermore National Laboratory	Speaker
Bhattacharya, Riddhiman	University of Michigan, Ann Arbor	Poster Presenter
Bhattacharyya, Jishnu J	University of Virginia	Poster Presenter
Bitzek, Erik	FAU Erlangen - Nurnberg	Poster Presenter
Blendell, John E	Purdue University	Poster Presenter
Bodunrin, Michael O	University of the Witwatersrand	Poster Presenter
Buey, Daniel	The Ohio State University	Poster Presenter
Cai, Wenjun	University of South Florida	Poster Presenter
Cai, Xiaorong	Purdue University	Poster Presenter
Callahan, Patrick G	University of California, Santa Barbara	Attendee
Chatterjee, Kamalika	University of Illinois at Urbana-Champaign	Poster Presenter
Chen, Jingqi	The University of British Columbia	Attendee
Chen, Zhangqi	The Ohio State University	Poster Presenter
Chen, Xi	Purdue University	Poster Presenter
Chen, Lianyi	Missouri University of Science and Technology	Poster Presenter
Chesser, Ian	Carnegie Mellon University	Poster Presenter
Cihan, Ebru	Karlsruhe Institute of Technology	Poster Presenter
Clark, Trevor	University of California, Riverside	Poster Presenter
Cordero, Zachary C	Rice University	Poster Presenter
Cornish, Lesley A	University of the Wiwatersrand	Poster Presenter
Cunningham, Kevin H	ATI Specialty Alloys & Components	Poster Presenter
Cunningham, Ross W	Carnegie Mellon University	Poster Presenter
Curtin, William A	École Polytechnique Fédérale de Lausanne	Speaker
De Graef, Marc J	Carnegie Mellon University	Speaker
DeCost, Brian L	Carnegie Mellon University	Poster Presenter
Despres, Arthur	University of British Columbia	Attendee
Diehl, Martin	Max-Planck-Institut fuer Eisenforschung GmbH	Poster Presenter
Dimiduk, Dennis M	Ohio State University	Discussion Leader

Doherty, Roger D	Drexel University	Attendee
Dowding, Robert J	US Army Research Laboratory	Attendee
Du, Xinpeng	Ohio State University	Poster Presenter
Dye, David	Department of Materials, Imperial College	Attendee
Eastman, Christopher M	TimkenSteel Corporation	Poster Presenter
Egan, Ashton J	The Ohio State University	Poster Presenter
El-Awady, Jaafar	Johns Hopkins University	Speaker
Engel, Jona	ETH Zurich	Poster Presenter
Foley, Daniel L	Drexel University	Poster Presenter
Foster, Sarah J	University of Tennessee, Knoxville	Attendee
Gaskey, Bernard	Johns Hopkins University	Poster Presenter
Ghazisaeidi, Maryam	Ohio State University	Speaker
Gianola, Daniel S	University of California, Santa Barbara	Speaker
Gottstein, Guenter	RWTH Aachen University	Discussion Leader
Groeber, Michael	Air Force Research Laboratory	Speaker
Gumbsch, Peter	Fraunhofer Institute for Mechanics of Materials IWM	Chair
Guo, Wei	Oak Ridge National Laboratory (ORNL)	Poster Presenter
Handwerker, Carol A	Purdue University	Vice Chair
Hardin, Thomas J	Massachusetts Institute of Technology	Poster Presenter
Hayashi, Yujiro	Toyota Central R&D Labs., Inc.	Speaker
Hemker, Kevin	Johns Hopkins University	Discussion Leader
Hinojos, Alejandro	The Ohio State University	Poster Presenter
Hooshmand, Mohammad S	The Ohio State University	Poster Presenter
Hutchinson, Christopher R	Monash University	Speaker
Jaegle, Eric A	Max-Planck-Institut fur Eisenforschung	Poster Presenter
Jain, Manish	University of Nevada, Reno	Poster Presenter
Jiao, Quan H	Johns Hopkins University	Poster Presenter
Jin, Ke	Oak Ridge National Laboratory	Poster Presenter
Judge, Virginia K	Colorado School of Mines	Poster Presenter
Kadirvel, Kamalnath	Ohio State University	Attendee
Kauffmann, Alexander	Karlsruhe Institute of Technology (KIT)	Poster Presenter
Keist, Jayme S	Penn State University	Poster Presenter
Kienl, Christiane	University of Cambridge	Poster Presenter
Kim, Hyoung Seop	POSTECH	Attendee
Kitahara, Andrew R	Carnegie Mellon University	Attendee
Kloewer, Jutta	VDM Metals	Discussion Leader
Knapp, Gerald L	Pennsylvania State University	Poster Presenter
Knowles, Alexander J	Imperial College London	Poster Presenter
Koch, Sascha	Karlsruhe Institute of Technology	Poster Presenter
Kohlhorst, Noah M	The Ohio State University	Poster Presenter
Koslowski, Marisol	Purdue University	Speaker

Koyama, Motomichi	Kyushu University	Attendee
Krogstad, Jessica A	University of Illinois, Urbana-Champaign	Poster Presenter
Kumar, Amit	Case Western Reserve University	Poster Presenter
Kwiatkowski da Silva, A	Max-Planck-Institut fuer Eisenforschung GmbH	Poster Presenter
Lafata, Marissa A	University of California, Santa Barbara	Poster Presenter
Lass, Eric A	National Institute of Standards and Technology	Attendee
Lavenstein, Steven	Johns Hopkins University	Poster Presenter
Lee, Byeong-Joo	Pohang University of Science and Technology	Poster Presenter
Lenthe, William C	University of California, Santa Barbara	Poster Presenter
Lewis, Alexis C	National Science Foundation	Discussion Leader
Li, Ju	Massachusetts Institute of Technology	Speaker
Li, Lin	The University of Alabama	Poster Presenter
Li, Yi	The Ohio State University	Poster Presenter
Lindwall, Greta	NIST	Poster Presenter
Lipkowitz, Kenny B	Office of Naval Research	Attendee
Luhrs, Lukas	Hamburg University of Technology	Poster Presenter
Luo, Jian	University of California, San Diego	Attendee
Mandal, Sudipto	Carnegie Mellon University	Poster Presenter
Maresca, Francesco	Ecole Polytechnique Federale de Lausanne (EPFL)	Poster Presenter
Marquis, Emmanuelle A	University of Michigan	Attendee
Mathaudhu, Suveen N	University of California, Riverside	Attendee
McCue, Ian D	Texas A&M University	Poster Presenter
McDowell, David L	Georgia Institute of Technology	Attendee
Miller, Victoria	North Carolina State University	Discussion Leader
Miracle, Daniel B	Air Force Research Laboratory	Attendee
Montonera, Darrell	Illinois Institute of Technology	Attendee
Moridi, Atieh	Massachusetts Institute of Technology	Poster Presenter
Mullins, William M	U.S. Office of Naval Research	Attendee
Murphy, Aeriel D	University of Michigan	Poster Presenter
Nguyen, Lily	U.S. Naval Research Laboratory	Poster Presenter
Niezgoda, Stephen	The Ohio State University	Poster Presenter
Nöhring, Wolfram G	EPFL	Poster Presenter
Noraas, Ryan B	Pratt & Whitney	Attendee
O'Brien, Mary K	Colorado School of Mines	Poster Presenter
Panwisawas, Chinnapat	University of Birmingham	Poster Presenter
Paranjape, Harshad	Colorado School of Mines	Poster Presenter
Pathak, Sid	University of Nevada, Reno	Poster Presenter
Pekin, Thomas C	University of California, Berkeley	Poster Presenter
Pollock, Tresa M	University of California, Santa Barbara	Speaker
Polonsky, Andrew T	University of California, Santa Barbara	Poster Presenter
Proudhon, Henry	MINES ParisTech	Speaker

Puri, Saurabh	Microstructure Engineering	Attendee
Qi, Liang	University of Michigan	Attendee
Raabe, Dierk R	Max Planck Institute for Iron Research	Vice Chair
Raju Natarajan, Anirudh	University of California, Santa Barbara	Poster Presenter
Ram, Farangis	Carnegie Mellon University	Poster Presenter
Reeve, Kathlene N	Purdue University	Poster Presenter
Reeve, Sam	Purdue University	Poster Presenter
Revathy Rajan, Prasath Babu	KTH Royal Institute of Technology	Poster Presenter
Roach, Christian	University of California, Riverside	Poster Presenter
Rodgers, Theron M	Sandia National Laboratories	Poster Presenter
Rollett, Anthony D	Carnegie Mellon University	Discussion Leader
Roschning, Benedikt	Hamburg University of Technology	Poster Presenter
Rotella, John	Purdue University - MSE/AAE	Poster Presenter
Rovelli, Iacopo	Imperial College London	Poster Presenter
Rugg, David	Rolls Royce	Discussion Leader
Rupert, Timothy J	University of California, Irvine	Attendee
Sabisch, Julian E.C.	University of California, Berkeley	Poster Presenter
Schlutter, Regina R	University of Cambridge	Poster Presenter
Schroeder, William A	Kitware Inc.	Speaker
Seita, Matteo	Nanyang Technological University	Poster Presenter
Senanayake, Nishan M	Case Western Reserve University	Poster Presenter
Shahrezaei, Sina	University of California, Riverside	Poster Presenter
Shi, Qianying	University of Michigan	Poster Presenter
Shiflet, Gary J	University of Virginia	Attendee
Shower, Patrick	Oak Ridge National Laboratory	Poster Presenter
Sinclair, Chad	The University of British Columbia	Poster Presenter
Singh, Saransh	Carnegie Mellon University	Poster Presenter
Slone, Connor E	The Ohio State University	Poster Presenter
Small, Kathryn A	Drexel University	Poster Presenter
Song, Gyuho	University of Connecticut	Poster Presenter
Song, Hengxu	Johns Hopkins University	Poster Presenter
Stinville, Jean-Charles	University of California Santa Barbara	Attendee
Strachan, Alejandro	Purdue University	Poster Presenter
Stricker, Markus	Karlsruhe Institute of Technology	Poster Presenter
Sulzer, Sabin	University of Oxford	Attendee
Sun, Wenwen	Monash University	Poster Presenter
Suzuki, Akane	GE Global Research	Attendee
Sypek, John T	University of Connecticut	Poster Presenter
Taheri, Mitra L	Drexel University	Speaker
Tasan, Cemal C	Massachusetts Institute of Technology	Attendee
Thirumalai, Neeraj S	ExxonMobil Research and Engineering Company	Attendee

Traylor, Rachel E	University of California, Berkeley	Poster Presenter
Trinkle, Dallas R.	Univ. Illinois, Urbana-Champaign	Poster Presenter
Turner, John A.	UT-Battelle / Oak Ridge National Lab	Poster Presenter
Van der Ven, Anton	University of California, Santa Barbara	Speaker
Vedanti, Pawan	Wayne State University	Poster Presenter
Venkataraman, Ajey	Purdue University	Poster Presenter
Volkert, Cynthia A	University of Goettingen	Speaker
Wang, Fulin	University of Virginia	Poster Presenter
Wang, Congying	Purdue University	Poster Presenter
Wang, Guofeng	University of Pittsburgh	Attendee
Wang, Peisheng	National Institute of Standards and Technology	Poster Presenter
Whitt, Harrison C	The Ohio State University	Poster Presenter
Wielewski, Euan	University of Glasgow	Poster Presenter
Wiezorek, Jorg	University of Pittsburgh	Poster Presenter
Winiarski, Bartlomiej	Thermo Fisher Scientific	Attendee
Wu, Kaisheng	Thermo-Calc Software Inc.	Attendee
Wu, Xin	Wayne State University	Poster Presenter
Yaeger, Alyssa N	Purdue University	Poster Presenter
Yang, Shengfeng	University of California, San Diego	Poster Presenter
Yang, Yang	Massachusetts Institute of Technology	Poster Presenter
Yang, Rui	Chinese Academy of Sciences	Speaker
Yavas, Hakan	Johns Hopkins University	Poster Presenter
Zhang, Qiaofu	The Ohio State University	Poster Presenter
Zhao, Ji-Cheng	The Ohio State University	Chair
Zhong, Wei	The Ohio State University	Poster Presenter
Zou, Yu Y	MIT	Poster Presenter

188 Attendees

Physical Metallurgy (GRS) (2017)

Name	Organization	Participation
Aldaz-Cervantes, Mayela R	University of California, Santa Barbara	Poster Presenter
Beese, Allison M	Pennsylvania State University	Speaker
Bhattacharya, Riddhiman	University of Michigan, Ann Arbor	Poster Presenter
Cai, Xiaorong	Purdue University	Poster Presenter
Chatterjee, Kamalika	University of Illinois at Urbana-Champaign	Speaker
Chen, Xi	Purdue University	Poster Presenter
Clark, Trevor	University of California, Riverside	Poster Presenter
Cunningham, Kevin H	ATI Specialty Alloys & Components	Poster Presenter
Diehl, Martin	Max-Planck-Institut fuer Eisenforschung GmbH	Poster Presenter
Engel, Jona	ETH Zurich	Poster Presenter
Gaskey, Bernard	Johns Hopkins University	Poster Presenter
Gumbsch, Peter	Fraunhofer Institute for Mechanics of Materials IWM	Discussion Leader
Jain, Manish	University of Nevada, Reno	Poster Presenter
Jiao, Quan H	Johns Hopkins University	Poster Presenter
Judge, Virginia K	Colorado School of Mines	Poster Presenter
Kauffmann, Alexander	Karlsruhe Institute of Technology (KIT)	Poster Presenter
Kienl, Christiane	University of Cambridge	Poster Presenter
Koch, Sascha	Karlsruhe Institute of Technology	Poster Presenter
Kwiatkowski da Silva, Alisson	Max-Planck-Institut fuer Eisenforschung GmbH (MPIE)	Poster Presenter
Lafata, Marissa A	University of California, Santa Barbara	Poster Presenter
Lavenstein, Steven	Johns Hopkins University	Poster Presenter
Lenthe, William C	University of California, Santa Barbara	Poster Presenter
Lindwall, Greta	NIST	Poster Presenter
Mandal, Sudipto	Carnegie Mellon University	Speaker
Mathaudhu, Suveen N	University of California, Riverside	Speaker
Miller, Victoria	North Carolina State University	Chair
Moridi, Atieh	Massachusetts Institute of Technology	Poster Presenter
Murphy, Aeriel D	University of Michigan	Speaker
Nguyen, Lily	U.S. Naval Research Laboratory	Speaker
O'Brien, Mary K	Colorado School of Mines	Poster Presenter
Panwisawas, Chinnapat	University of Birmingham	Speaker
Pilchak, Adam	U.S. Air Force Research Laboratory	Speaker
Raju Natarajan, Anirudh	University of California, Santa Barbara	Speaker
Reeve, Kathlene N	Purdue University	Discussion Leader
Reeve, Sam	Purdue University	Poster Presenter
Rettberg, Luke H	Pratt & Whitney	Speaker
Roach, Christian	University of California, Riverside	Poster Presenter
Rodgers, Theron M	Sandia National Laboratories	Speaker
Rovelli, Iacopo	Imperial College London	Poster Presenter

Sabisch, Julian E.C.	University of California, Berkeley	Poster Presenter
Schlutter, Regina R	University of Cambridge	Poster Presenter
Shahrezaei, Sina	University of California, Riverside	Poster Presenter
Shi, Qianying	University of Michigan	Poster Presenter
Shower, Patrick	Oak Ridge National Laboratory	Speaker
Song, Gyuho	University of Connecticut	Poster Presenter
Stricker, Markus	Karlsruhe Institute of Technology	Poster Presenter
Sulzer, Sabin	University of Oxford	Poster Presenter
Venkataraman, Ajey	Purdue University	Poster Presenter
Wang, Congying	Purdue University	Poster Presenter
Yaeger, Alyssa N	Purdue University	Poster Presenter
Zhao, Ji-Cheng	The Ohio State University	Discussion Leader
Zhong, Wei	The Ohio State University	Poster Presenter

52 Attendees